



## The 12th International Conference on Environmental Catalysis (ICEC2022), Osaka (Japan), July 30th – August 2nd, 2022

This is the special issue containing 47 articles based on papers presented at the 12th International Conference on Environmental Catalysis (ICEC2022) held at “Centenary Memorial Hall” of Kansai University (Senriyama campus) in Osaka, Japan, during July 30th July to August 2nd, 2022. The ICEC2022 was organized by the Catalysis Society of Japan and the chairpersons were Prof. Hiromi Yamashita (Osaka University) and Prof. Atsushi Satsuma (Nagoya University).

The ICEC has been held in every two or three years since 1995. The former ICEC conferences were held in Pisa (1995), Miami Beach (1998), Tokyo (2001), Heidelberg (2005), Belfast (2008), Beijing (2010), Lyon (2012), Ashville (2014), Newcastle (2016), Tianjin (2018), and Manchester (2020). The main objective of the ICEC2022 conference is to exchange the latest research on environmental catalysis and to promote friendship among catalyst scientists and engineers all over the world. The conference covers fundamental and applied research in environmental catalysis and catalyst development for a wide range of applications including following topics:

Sustainable and Clean Energy Production,  
Automotive and Stationary Emission Control,  
Air Cleaning and Combustion,  
Water Treatment,  
Green Chemistry and Biomass Transformation,  
CO<sub>2</sub> Utilization and Recycling,  
H<sub>2</sub> Storage and Transportation,  
Photocatalysis,  
Advanced Process with Electrocatalysis and Plasma Utilization.

The detailed information on the ICEC history and activity is shown at the web page of ICEC (<https://icec.catsj.jp/>) and that of this ICEC2022 is shown at (<https://icec.catsj.jp/icec2022/>).

The ICEC2022 was held as a hybrid conference with in-person and virtual attendance. Meeting the safety requirements to cope with COVID-19 situation, the ICEC2022 had 483 participants from 28 countries and 402 presentations from academia and industry representing both applied and fundamental research. The ICEC2022 provided 4 plenary lectures, 16 keynote lectures, 10 special invited lectures, 145 oral presentations held in 4 sessions and 175 poster presentations. The 4 plenary lectures were presented by Professor Chris Hardacre (The University of Manchester), Dr. Hiroshi Hirata (Toyota Motor Corporation), Prof. Christopher W. Jones (Georgia Institute of Technology), and Prof. Junhua Li (Tsinghua University). As a novel feature, a special session dedicated to Applied Catalysis B was coordinated and 10 invited

presentations were made by researchers strongly related to Applied Catalysis B.

This special issue “The 12th International Conference on Environmental Catalysis (ICEC2022)” of Applied Catalysis B contains a preface and 46 papers that were presented at the ICEC2022 conference. These manuscripts were accepted after the regular review process for publication in Applied Catalysis B. The papers provide the most recent advanced and progressive results on environmental catalysis. Finally, the Guest Editors, H. Yamashita, Z. Bian, A. Urakawa, and M. Stockenhuber would like to sincerely thank their colleagues, all authors and referees, the Editors of Applied Catalysis B, and the editorial staff, for their invaluable, continuous and excellent support during the process of publishing the papers related to ICEC2022 held in Osaka Japan.

Hiromi Yamashita.

Zhenfeng Bian.

Atsushi Urakawa.

Michael Stockenhuber.

Hiromi Yamashita\*

*Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, 2-1 Yamadaoka, Suita, Osaka 565-0871, Japan*

Zhenfeng Bian

*MOE Key Laboratory of Resource Chemistry and Shanghai Key Laboratory of Rare Earth Functional Materials, Shanghai Normal University, Shanghai 200234, China*

*E-mail address: [bianzhenfeng@shnu.edu.cn](mailto:bianzhenfeng@shnu.edu.cn).*

Atsushi Urakawa

*Department of Chemical Engineering, Delft University of Technology, Delft, the Netherlands*

*E-mail address: [A.Urakawa@tudelft.nl](mailto:A.Urakawa@tudelft.nl).*

Michael Stockenhuber

*Chemical Engineering, School of Engineering, University of Newcastle, Callaghan, NSW 2308, Australia*

*E-mail address: [michael.stockenhuber@newcastle.edu.au](mailto:michael.stockenhuber@newcastle.edu.au).*

\* Corresponding author.

*E-mail address: [yamashita@mat.eng.osaka-u.ac.jp](mailto:yamashita@mat.eng.osaka-u.ac.jp) (H. Yamashita).*

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